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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/701,084

11/04/2003

Scott D. Schwab

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MH2 TECHNOLOGY LAW GROUP (Cust. No. w/NewMarket)

1951 KIDWELL DRIVE

SUITE 550

TYSONS CORNER, VA 22182

EXAMINER

TOOMER, CEPHIA D

ART UNIT

PAPER NUMBER

1797

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/701,084	Applicant(s) SCHWAB ET AL.	
	Examiner Cephia D. Toomer	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) See Continuation Sheet is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☐ Claim(s) 62 and 63 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims pending in the application are 1,2,5,7-11,13,14,16-19,23,24,26,27,29-33,35,36,38-42,44,45,47-51,53,54 and 56-65.

Continuation of Disposition of Claims: Claims rejected are 1,2,5,7-11,13,14,16-19,23,24,26,27,29-33,35,36,38-42,44,45,47-51,53,54,56-61,64 and 65.

DETAILED ACTION

1. This Office action is in response to the amendment filed July 30, 2008 in which claims 1, 10, 13, 19, 23, 26, 32, 35, 41, 44, 50, 53, 60, 62 and 63 were amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2,5, 7-11, 13, 14, 16-18, 23, 24, 26,27, 29-33, 35, 36, 38-42, 44, 45, 47-51, 53, 54 and 56-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwab (US 5,669,938) in view of Lin (US 6,458,173).

Schwab teaches a fuel composition comprising a major proportion of a hydrocarbon middle distillate fuel (diesel, kerosene, gas oils, jet fuel, etc), about 1 to about 40 vol% water and an emission reducing amount of at least one fuel-soluble organic nitrate such as 2-ethylhexyl nitrate (see abstract; col. 2, lines 32-39). The organic nitrate includes nitrate esters of substituted aliphatic alcohols. Preferred nitrates are those having up to about 10 carbon atoms (see col. 2, line 55 through col. 3, lines 1-5 and 10-16). The nitrates are present in the fuel composition in an amount from about 500 to about 50,000 ppm (see col. 3, lines 48-55). Other additives may be included within the fuel composition such as corrosion inhibitors, antioxidants, etc (see col. 4, lines 52-60). Also, Schwab teaches that the finished fuel may contain minor

amounts of non-hydrocarbonaceous fuels or blending components such as alcohols and dialkyl ethers (see col. 2, lines 4-10). Schwab teaches the limitations of the claims other than the differences that are discussed below.

In the first aspect, Schwab differs from the claims in that he does not exemplify a fuel composition wherein the oxygenates is blended with the fuel. However, no unobviousness is seen in this difference because Schwab teaches that the finished fuels may contain blending agents such as dialkyl ethers. This teaching suggests the combination.

In the second aspect, Schwab differs from the claims in that he does not specifically teach the methods of claims 1, 23, 32, 41 and 50. However, no unobviousness is seen in this difference because it is well settled that the discovery of a previously unappreciated property of a prior art composition does not render the old composition patentable to the discoverer. Thus, claiming of a new use, new function or unknown property does not necessarily make the claim patentable, especially in view of the prior art composition being used in the same environment as the claimed fuel composition.

Schwab differs from the claims in that he does not specifically teach the claimed sulfur content of the fuel. However, Lin teaches that it is known to use diesel fuels that contain 10 ppm or less of sulfur (see col. 10, lines 5-9).

It would have been obvious to one of ordinary skill in the art to use low sulfur fuels because Schwab is concerned about exhaust emissions and specifically teaches

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that if auxiliary liquid fuels are used with the main fuel that those fuels be desulfurized and Lin teaches that low sulfur diesel fuels meet this requirement.

4. Claims 1, 2, 5, 7, 8, 10, 11, 13, 14, 16, 17, 19, 23, 24, 26, 27, 29, 30, 32, 33, 35, 36, 38, 39, 41, 42, 44, 45, 47, 48, 50, 51, 53, 54, 56, 57 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeh (US 6,447,557).

Yeh teaches a diesel fuel composition wherein the fuel is an ultra-low sulfur diesel having no more than 50 ppm sulfur (see abstract). This teaching suggests a sulfur content of 8 ppm or less. Yeh teaches that the addition of at least one of an alcohol, ketone or mixture thereof to the ultra-low sulfur diesel reduces particulate emissions (see col. 3, lines 18-22). Such an alcohol includes pentanol, hexanol, 2-ethylhexanol and 2-propylheptanol and represents Applicant's hydrocarbon additive and oxygenate (see claim 9). Yeh teaches one or more conventional additive may be present in the fuel composition (see col. 5, lines 21-31). With respect to the peroxide content of the fuel composition, it would be reasonable to expect that the fuel composition meets this limitation because Yeh teaches a similar fuel with the claimed additives.

Yeh fails to teach the method of reducing the amount of peroxides in a middle distillate fuel. However, it would be reasonable to expect that the fuel composition of Yeh would reduce the amount of peroxides because Yeh teaches a low sulfur fuel wherein an oxygenate and the claimed hydrocarbon additive may be present. The benefit of reducing the amount of peroxides would have naturally flowed from the suggestions of Yeh. *Ex parte Obiaya*, 227 USPQ 58 (BPAI 1985) (holding that the

recognition of another advantage flowing naturally from following the suggestion of the prior art cannot be the basis for patentability when the difference would otherwise be obvious.

Yeh differs from the claims in that he does not specifically teach the methods of claims 1, 23, 32, 41 and 50. However, no unobviousness is seen in this difference because it is well settled that the discovery of a previously unappreciated property of a prior art composition does not render the old composition patentable to the discoverer. Thus, claiming of a new use, new function or unknown property does not necessarily make the claim patentable, especially in view of the prior art composition being used in the same environment as the claimed fuel composition.

With respect to claim 19, the language adapted to be combined is intended use and has not been given patentable weight.

2. Claims 1, 2, 5, 7-11, 13, 14, 16-19, 23, 24, 26, 27, 29-33, 35, 36, 38-42, 44, 45, 47-51, 53, 54, 56-61, 64 and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beimesch (US 6,080,212).

Beimesch teaches a low sulfur diesel fuel wherein the sulfur content is less than 0.05% by weight (see abstract; col. 1, lines 11-20). This teaching suggests the claimed sulfur content. The fuel comprises a combination of at least two esters as set forth at col. 2, line 34 through col. 4, lines 1-41. These compounds represent Applicant's oxygenate. The fuel composition may contain up to about 1000 ppm cetane improves such as 2-ethylhexyl nitrate, nitro or nitroso compounds (see col. 4, lines 51-58). These

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compounds represent the hydrocarbon additive. The composition may also contain polyethylene glycol ethers (see col. 5, lines 5-10). These compounds also may represent the claimed oxygenate. Beimesch teaches that the fuel may contain conventional additives (see col. 4, line 51-col. 5, lines 1-26). Beimesch teaches the limitations of the claims other than the differences that are discussed below.

Beimesch differs from the claims in that he does not specifically teach the methods of claims 1, 23, 32, 41 and 50. However, no unobviousness is seen in this difference because it is well settled that the discovery of a previously unappreciated property of a prior art composition does not render the old composition patentable to the discoverer. Thus, claiming of a new use, new function or unknown property does not necessarily make the claim patentable, especially in view of the prior art composition being used in the same environment as the claimed fuel composition.

3. Applicant's arguments filed have been fully considered but they are not persuasive.

Applicant argues that Schwab does not teach or suggest the particular oxygenates presently claimed and that the broad and general description of "dialkyl ethers" is insufficient to motivate one skilled in the art to select the presently claimed ethers.

The examiner respectfully disagrees. It is well known in the art that dimethyl ether has been used in middle distillate fuels and in diesel engines as the fuel. Analysis of whether the subject matter of a claim would be obvious need not seek out precise teaching directed to the specific subject matter of the challenged claim, for a court can

take account of the inferences and creative steps that a person of ordinary skill in the art would employ. *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-1741 (2007), quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), see also *DyStar Textilfarben GmbH and Co. Deutschland KG v. C.H. Patrick Co.*, 464 F. 3d 1356, 1361 (Fed. Cir. 2006) ("The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself."); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969)(Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness 'from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.'").

Applicant argues that the examiner has relied upon the theory of inherency to argue that the discovery of a previously unappreciated property of a prior art composition does not render the old composition patentable to the discoverer. Applicant argues that the examiner has not provided a basis in fact or technical reasoning to support her position.

Applicant's arguments have been considered but are not deemed persuasive. Schwab teaches the step of adding the hydrocarbon additive to fuel and he teaches that an oxygenate such as dialkyl ether may be added to the fuel. He does not exemplify a fuel composition wherein both of the components are present. However, he does set forth the necessary steps to produce a fuel containing both components. Since Applicant's method steps include providing a middle distillate fuel blended with one or

more oxygenates and combining the fuel with a hydrocarbon additive, it would be reasonable to expect that the fuel composition would reduce the amount of peroxides in the fuel. The prior art can be modified to reject claims as prima facie obvious as long as there is a reasonable expectation of success. Evidence showing there is no reasonable expectation of success may support a conclusion of nonobviousness.

Applicant argues that Lin does not teach reducing peroxides.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that Yeh neither teaches nor suggests the presently claimed composition because Applicant has excluded ketones from the claimed oxygenates.

The examiner has amended her rejection and taken the position that the alcohols taught by Yeh constitute the oxygenate and the additive. Yeh teaches that a mixture of alcohols such as pentanol, hexanol, 2-ethylhexanol and 2-propylheptanol may be present in the fuel.

With respect to Applicant's arguments regarding the sulfur content of the fuel, Yeh teaches that the diesel fuel contains no more than 50 ppm. This teaching clearly suggests a diesel fuel with 8 ppm or less of sulfur.

Applicant argues that Beimesch's recitation of polyethylene glycol ethers is insufficient to motivate one skilled in the art to select the claimed ethers, much less teach or suggest any of the other non-ether oxygenates.

Beimesch teaches that his first category of additives can be any combination of at least two combination of at least two esters. The first type of ester is a carboxylic ester (see col. 2, line 54 through col. 3, lines 1-5). This ester is recited as an oxygenate in the presently claimed oxygenates.

Applicant argues that Beimesch teaches thousands of possible additives and that one of ordinary skill in the art would have to make the unlikely selection of a single particular nitrate (2-ethylhexyl nitrate), nitro or nitroso compound.

It is noted by the examiner that Beimesch teaches any number of conventional additives may be present in the fuel composition. However, he specifically claims cetane improvers and he states that the cetane improver may be 2-ethylhexyl nitrate, nitro or nitroso. This teaching clearly sets forth that the hydrocarbon additive of the presently claimed invention would have been selected by one of ordinary skill in the art.

4. Claims 62 and 63 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record fails to teach or suggest the claimed oxygenate compounds.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cephia D. Toomer/
Primary Examiner
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